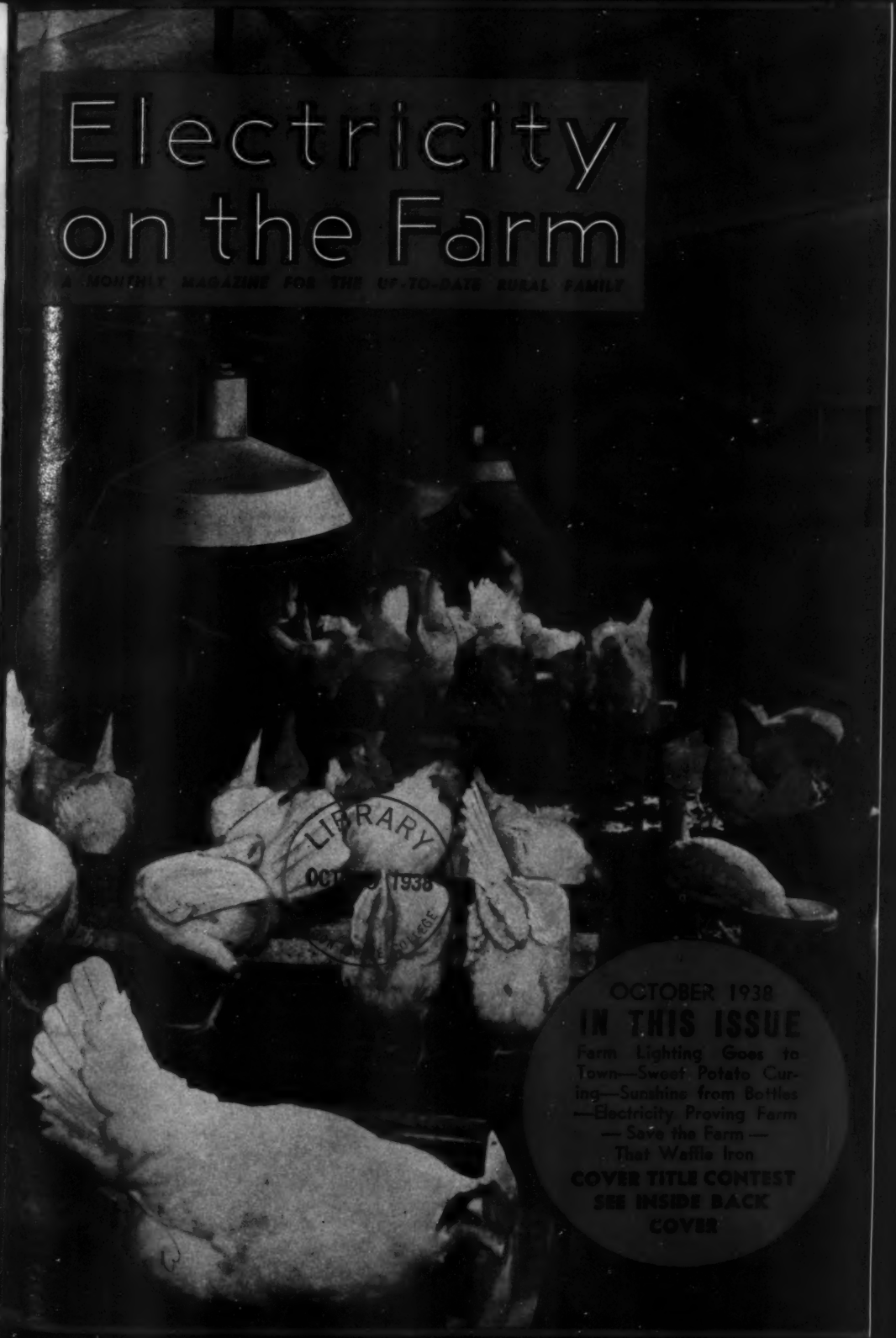
Electricity on the Farm

A MONTHLY MAGAZINE FOR THE UP-TO-DATE RURAL FAMILY



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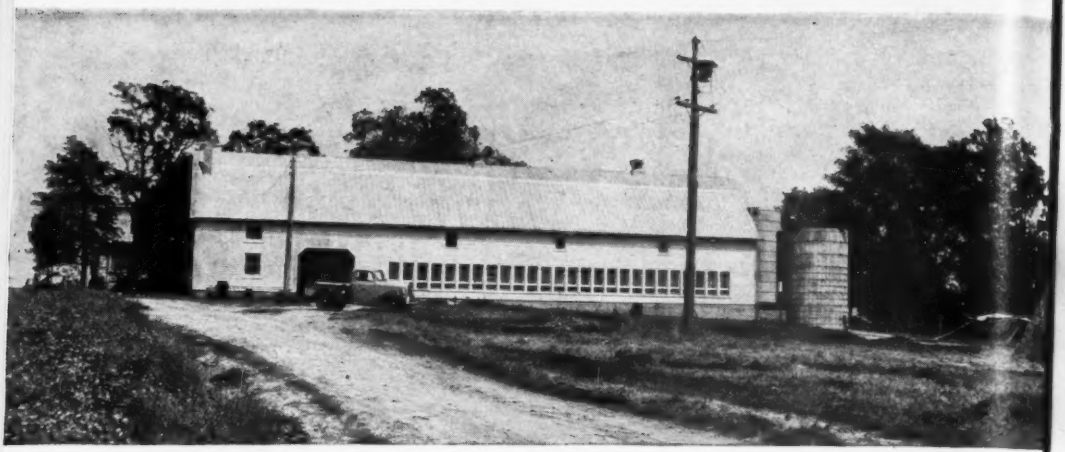
COVER TITLE CONTEST
SEE INSIDE BACK COVER



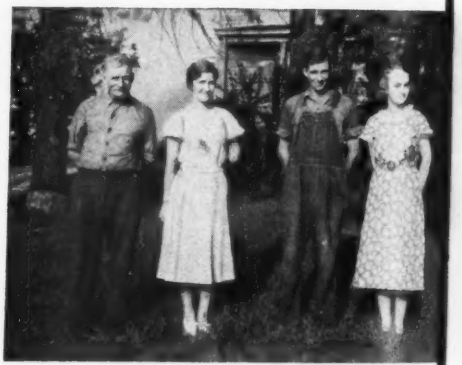
"We Make Electricity Pay Its Way"

Says Mr. W. H. Moore, R. D., Sabot, Virginia

"We make each piece of electric equipment pay for the next on our farm. Since our 354-acre dairy farm must support eight of us, I decided long ago that we had to operate it the most economical way—so we tried electricity.

"First we installed a milk cooler and an electric water system, which not only paid for themselves but saved us enough for an electric household refrigerator. Continuing this plan, we now have an electric iron, a dairy-utensil sterilizer, a host of small appliances, sewing machine, vacuum cleaner, two workshop motors, complete farm lighting, and a portable motor for hoisting hay, sawing wood, cutting ensilage, and grinding grain—all purchased with electrical profits.

"Thanks to electricity and the Virginia Electric and Power Company agricultural engineers, we are all now making a better living off our farm."



Mr. Moore, his daughter, his son, and his daughter-in-law electricity pay for itself on their 354-acre dairy farm

And, like Mr. Moore, thousands of other farmers are making electricity pay for itself. They find that the best way to be sure of enjoying savings from the use of electricity is to buy reliable equipment that economizes on current and operates dependably for years.

You, too, can make electricity pay its way on your farm. You'll always be glad you bought General Electric products, because they seldom cost more in the beginning and save you money over the years.

You will find some valuable information about electricity for your farm in General Electric's farm book. May we send you a copy?

General Electric Company,

Dept. 6K-201,

Schenectady, N. Y.

I'd like a free copy of "Electric Helpers for the Farm Family."

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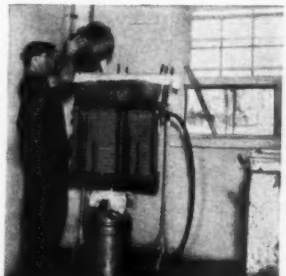

The Moores are proud of the modern milk room in their dairy

G-E portable farm motor being used to hay on the Moore farm

GENERAL ELECTRIC

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Goulds CID Water Supply Systems operate automatically for as little as three cents per day, and the initial cost is extremely low. Because of these low costs, a Goulds System can actually save you money.

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For: Running water boosts yield—not only dry season crop yield, but also livestock and poultry yield. Actual test figures prove it!

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You owe it to yourself to see these self-starting, self-stopping, self-oiling Goulds CID Systems now, to learn the dollars-and-cents figures on Goulds supplying running water for your farm. Your nearest Goulds dealer would like to give you full information. Send us the coupon now and we will mail you his name and address.

RUNNING WATER

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Editor's Chat

ULTRA HENMANSHIP

There are several classes of hen raisers.

The general farm flock grower may buy chicks or let the old hen hatch them. The flock runs at large, picks up waste grain, and forages for bugs. This may be a profitable flock in providing eggs for home consumption in the summer and meat, with a few eggs, in winter.

The farmer who strives to make a profitable side line out of his hens buys good stock, confines them in the winter, feeds a balanced mash and coaxes some high priced eggs with the aid of lights.

Then there is the fellow who studies hens, feed, markets and equipment and bears down judiciously to get the most from his hens at the right time in the right way without running into hen hospital bills. He is the exception. He is out in front with advanced practices which have been proved. He skims the cream off the profits before the rest of the parade catches up with him, and is on his way again. He practices ultra henmanship.

This year, for the first time in several years, the prospects for the good henman appear bright. Egg prices are good and getting better. The volume of storage eggs is lower than it has been in several years. Feed prices are low, and with prospects for a good corn crop there is reason to believe that the egg-feed ratio will be favorable.

Water at proper temperatures in winter increases water consumption and egg production. It may be provided automatically by electricity at low cost. Lights in combination with proper feeding practices insures greater production during the period of high prices. And for the ultra henman, who is willing to study and follow the rules, there is ultra-violet irradiation. Don't try it unless you mean business. It is not sufficient to just hang the lamp in the henhouse. Some poultrymen have made money by using ultra-violet. Some have made failures. There's a technique.

HAIR TRIM

It was on Wabash Avenue in busy downtown Chicago. Half the chairs were empty, so I went in. The barber was friendly. They usually are. This one had sold his shop recently but was still working there, part time. The union had been instrumental in boosting the price of hair cuts from 50c to 60c, and then 75c. He was opposed to the increase in price of haircuts but he could do nothing about it. Business dropped off. First there were 5 barbers, now only three; and one of those only part time. Income was not sufficient to meet expenses. He sold his shop. His part time pay was not sufficient to support his family. He must find other work. He called on a barber friend at Elmhurst. Formerly he had worked in that shop and made as much as $30 per week for part time. His friend John owned the shop and had employed 5 barbers. Now he was alone. He had taken in $32 that week. His rent was $25. "What's the matter, John?" "Compulsory 75c haircuts."

The hair cutter had just returned from a little trip up country in Wisconsin. He showed me the snapshots of the old home place and the neighbors. They were not much; but there was obvious admiration and a little envy in his eye. "Wet or dry?" Dry. He used the brush and shook the hair-sheet. "Mister, I don't know where you're from, but that's the place to be."

—I'm proud I am a farmer—

UPPER BERTH

Car ceilings are monotone and shiny this season. You can lie in an upper and look at the reflections on the ceiling and tell

(*More on page* 23)

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Here Is the Washer You Have Always Wanted—

New Fairday

by

FAIRBANKS-MORSE

You don't care anything about a few outstanding features in a washer. What you want is a washer that *is all good*. You want one that . . .

- ★ *Washes clothes clean*
- ★ *Washes quickly*
- ★ *Does the job easily*
- ★ *Is easy on the clothes*
- ★ *Is easy on you*
- ★ *And is economical to own and operate.*

● That is exactly what you get in this new Fairday. No washer on earth can do more than the Fairday. So why should you pay more?

Fairday controls are simple and easy to operate. There is no clash or jangle of gears. The machine is so silent that you can hardly hear it running in your own kitchen or laundry room. The wringer is absolutely safe for you to operate, safe for the clothes, and is adjustable to various types of fabric.

The new patented Fairday FLEXATOR is so constructed that clothes in the top, bottom, and middle of the tub are washed clean —not merely those at the bottom. Motor, wringer, washer, mechanism—*everything*—is backed by the unlimited guarantee bond of Fairbanks-Morse.

See your Fairday dealer for a demonstration. See for yourself that here is everything you could ask of any washer—and at less money than you expect to pay for one that does what the Fairday will do. If you don't know your Fairday dealer—write for his name. Address Fairbanks, Morse & Co., Department 58, 600 S. Michigan Avenue, Chicago, Ill.

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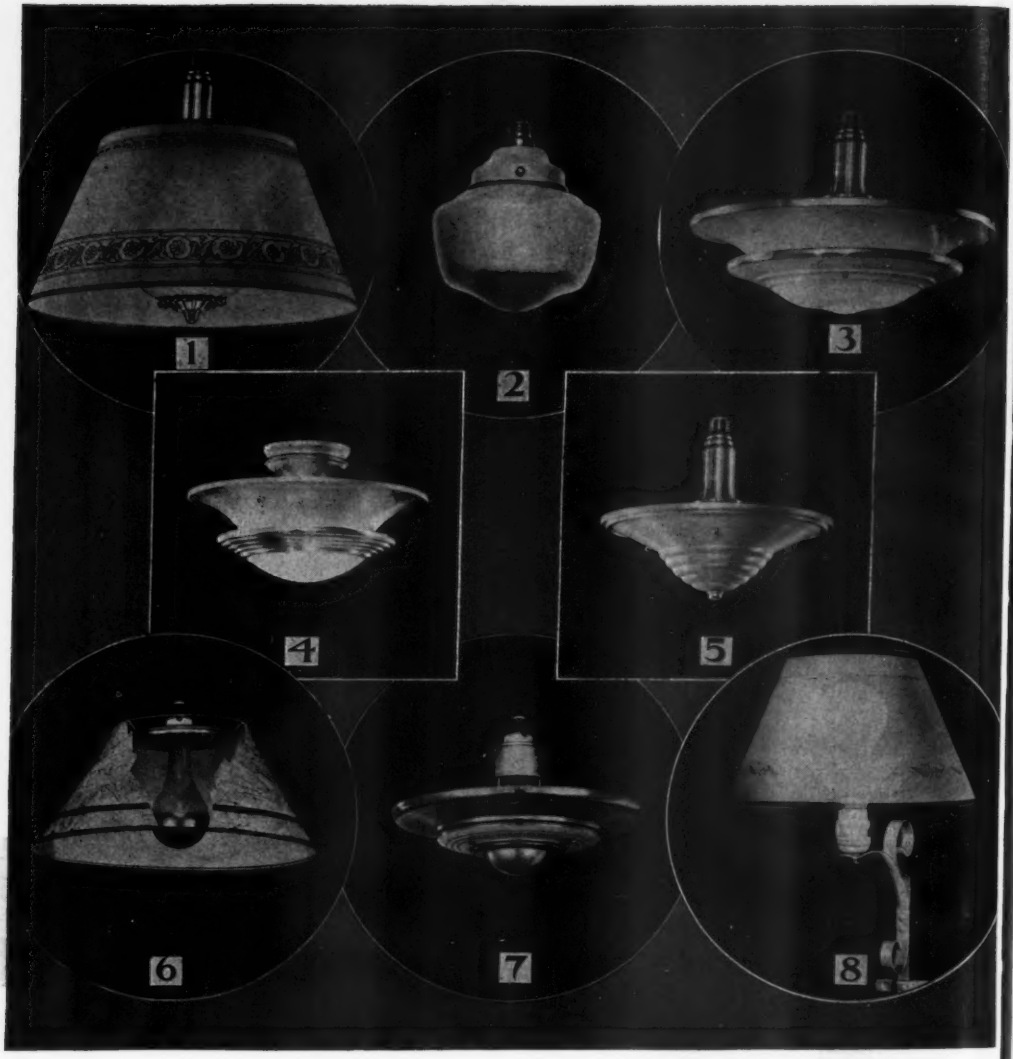
BRANCHES AND SERVICE STATIONS COVERING EVERY STATE IN THE UNION



Adapter Type and New Low Cost Lighting Fixtures

1. Dining room unit from a $12.30 set of fixtures for a five-room house. This price includes the bulbs. This fixture is 16 inches across and contains a plastic diffusing bowl. It is the IES type and makes an excellent light on the table as well as general illumination in the room.

2. This is a common type of kitchen lighting unit but made as a unit to screw into a lamp socket in place of a bare bulb. Semi-direct light.

3. A living room fixture of metal with luminous glass bottom. It is 15 inches wide, 10 inches long and sells for $3.70. It gives a diffused, semi-indirect light.

4. A kitchen unit of metal and diffusing glass 11½ inches across and made to attach to a collar in place of an ordinary kitchen enclosing bowl. It is part of a five-room $12.30 set.

5. Bedroom fixture. The shade is of metal. All the light is reflected to the ceiling and then down. Totally indirect, it produces a soft, distributed light but is not suitable for a working lamp. $1.15.

6. Adapter for modernizing the old bridge lamp. It uses a silvered bowl lamp and has a reflector inside the shade which provides a good semi-indirect light. The whole unit screws into the bridge lamp replacing the old lamp and shade.

7. Fixtures of this style are made in different sizes and are suitable for any room in the house. The round surface at the bottom is the end of the lamp. The fixtures can be used only with silvered bowl Mazda lamps which cost more than regular lamps. The light is indirect, being reflected first to the ceiling. The silvered bowl makes a perfect reflector. Shade is of metal.

8. Pin-it-up lamp showing a plastic cone diffuser in use. The diffuser prevents direct, glaring rays from falling on the work. This complete lamp sells for $1.15. Similar lamps in larger sizes with diffusing bowls are also available.

Note that the fixtures shown in illustrations 1, 2, 3, 5, 6, and 7 are all "adapter" type fixtures. that is, they are of a type which may be screwed in place of bare bulbs, thus adapting your old bare-lamp wiring to new style diffused lighting without the expense of re-wiring. These same fixtures or similar ones may be obtained for attaching to the walls and wiring-in as permanent installations. The prices are about the same.

A living-room or dining-room fixture of the semi-indirect type. One of the $29.95 sets contains a dining room fixture of this type. Note the uniform, shadowless illumination it produces, with highest intensity on the table.

FARM LIGHTING GOES TO TOWN

New Fixtures and I. E. S. Floor and Table Lamps at Low Prices Offer New Hope for Really Good Lighting in Modest Homes

By MARY MARGARET LYNCH

Miss Lynch lives on a farm at Cochranville, Pa., and teaches Home Economics in the Quarryville Rural High School.

WAS your house wired in the days when the well-lighted living room boasted a decorated ceiling fixture, with a cord dangling from it to the fancy lamp on the center table beneath? Ours was. The table lamp I remember was better than some, because it really stood high enough to give a reading light if we all huddled around the table, but it was ornamented in the best style of the period with a heavy glass shade painted with bunches of grapes, full size and purple of hue, every leaf and tendril copies in minutest detail. It was soon after the center-table era that we began to buy floor lamps. They were designed solely to be admired. Most of them had shades the size of a dishpan, covered with net or changeable taffeta gathered into dust-catching folds, lined with pink silk and finished with fringe. These lamps did cast an optimistic, rosy glow, and if you had good eyesight, you might stick your head under the shade and read. In our house, the floor lamp period was marked by a tangle of criss-cross extension cords, like nothing so much as spider webs trailing and dangling their way from one end of the room to the other, a menace to the unwary foot.

Great improvements have been made in lighting within the past few years. The pink-shaded floor lamp, no matter what size bulbs were used, never gave a good light for reading because the color, texture and shape of the shade tended to absorb the light instead of reflecting it. *We were not getting the most for our money from the current consumed by that lamp.* Substituting a plain inexpensive, light-colored parchment shade for the fancy fringed one greatly increased the amount of light from these lamps. But the electrical engineers were not content with having American women discard fancy shades for plain ones. They said, "Let's design a really good lamp which will give a strong, soft light for reading and working, with no glare. Let us also spread out part of this light so a whole room can be lighted without making one conscious of the source from which the light comes." The result is the I.E.S. lamp, the best lamp for seeing that has ever been offered.

I.E.S. lamps give a combination of diffused direct and indirect light. Because one can see so much better with them, and at the same time save your eyes, they have been called "better sight" lamps. They are made principally in table and floor models. While they are sold by many different companies, each of them bears an I.E.S. tag which states that they are approved by the Illuminating Engineering Society. And best of

This is the dining room on the George Cooper farm, in Cooper's Hollow, Ohio. The fixture is the dining room unit of one of the low priced sets. It has a diffusing globe similar to IES lamps and with a 150 watt bulb provides 25 foot-candles of light on the table. The farm has recently been provided with electric lights in spite of the fact that they have free natural gas from a gas well on their farm.

all they are among the least expensive lamps on the market.

Now comes one of the most pleasing pieces of news for farm folks interested in good lighting. It was printed in a little item in the "What's New" column of ELECTRICITY ON THE FARM on page 25 of the July issue. It told about complete sets of lighting fixtures now being put out by several manufacturers to sell at prices as low as $20 for a six room house. I have not seen all of these fixtures, but I have seen pictures and descriptions of them and they certainly look attractive and seem to more nearly answer the requirements for a well lighted home at reasonable cost than anything which has been on the market. One set for a five room house is listed at less than $12. Other groups of fixtures for six room houses with porches are priced at $18 to $20. But the best thing about these figures is that they are properly designed for ease in seeing without injury to the eyes and that there is a desirable unit for every location in the house. Some of them embrace the principles of the I.E.S. lamps. If manufacturers will just find some way now to make it easy for rural people to examine and purchase this equipment, it should help greatly in getting away from the glaring light, fantastic fixtures, and not-too-low prices which have been our lot in the past.

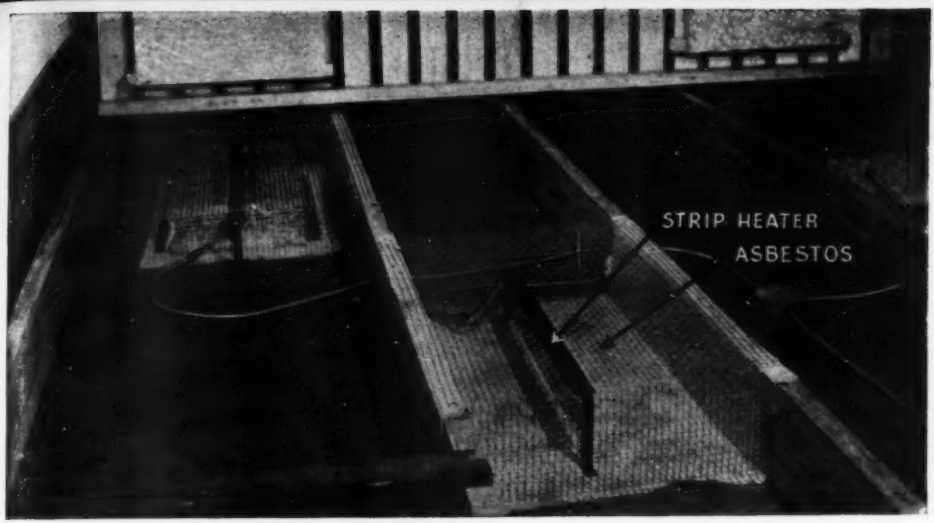
There are two types of these new fixtures now available. One type is to be wired-in by a wireman just as they have been in the past. The others are for use in houses where there are now just plain sockets or drop cords for bare lamps. The only thing necessary to install these is to remove the old lamps and screw in the new fixtures complete, in their place. These are called adapter type fixtures. They should be of special interest to renters, or people who move from one house to another as they can be taken down and moved just like a table lamp.

When you first see these new fixtures, you will be most impressed by their good looks and absence of fuss. Reflectors eliminate glare, and light large areas evenly instead of making one blindingly bright spot of light, leaving the rest of the room in shadow, as many of the old style fixtures did. They are designed to diffuse, or spread out the light. If you are a farm woman who must do some of her work by artificial light (and we all do), you will be delighted with the light they give. If you are the daughter of the house, whose Saturday morning job is to do the cleaning, you will bless these easy-to-care-for fixtures.

While we are talking about installing fixtures, it might be well to say something about where to install them and how to select the best place to have your switches for each room. Before you wire or rewire your house, locate and mark on the wall of each room the spot where you want the

(*More on page* 20)

A "Pin-it-up" lamp. An excellent lamp for many locations such as bed-lamp, behind the davenport or over the study table. It contains a diffusing bowl which reduces glare and provides an easy light for the eyes. The price of such lamps varies from $1.15 up.



View showing auxiliary 2 x 8 inch stringers for supporting the slatted floor, with electric wiring and heaters in place.

The South "Sweetens"

SWEET POTATO PROFITS BY ELECTRIC CURING

Sweet Potato Storage Houses Are Being Converted from Stove Heat to Automatic Electric Heat with a Resulting Increase in Percentage of Marketable Potatoes, Improvement in Quality, and Better Bank Accounts

By M. M. JOHNS

"Mel" Johns flits over the 450 miles of Tennessee's expanse helping farmers to make profits from their use of electricity. He is the University's Extension Specialist in Rural Electrification.

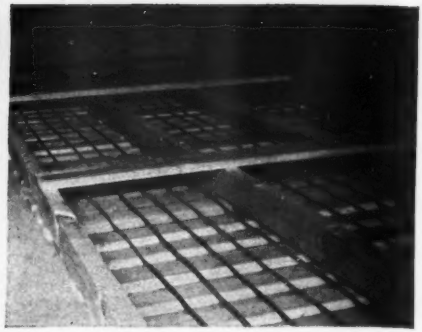
THE sweet potato, unlike its Irish cousin, requires a little special coddling after it is taken from the ground. Through years of trial and experimentation a system of curing and storing sweet potatoes has come into use. It is outlined, with the type of equipment and building needed, in Farmers' Bulletin No. 1442 of the United States Department of Agriculture. In general, the method consists of storing the potatoes in hampers or crates in a specially constructed building in which temperatures and humidities may be controlled. These buildings must be well insulated and provided with a properly designed ventilation system. It has been customary to use a stove placed near the center of the room for heating. A common size of farm storage building holds 2,000 bushels.

Immediately after digging, the potatoes are placed in the storage house in containers where they undergo a curing and drying process. The temperature is held at 85° for a period of eight or ten days. During this time chemical changes take place and cuts and bruises start healing. Removal of excess moisture calls for a good ventilation system. At the end of the curing period, small sprouts will appear and the skin will have a velvety texture.

When the curing is finished the temperature is dropped rather quickly to between 50° and 55° F. This cooling period usually takes about two days. From this time until the potatoes are marketed they are not handled or disturbed and the temperature should be kept between 50° and 55°.

In stove heated storage houses in Tennessee, a daily temperature variation of 10° to 15° is common, making it almost impossible to obtain a uniform cure. When stoves are fixed to keep the proper temperature near the floor of a house on cold days and nights, potatoes near the ceiling and stove are overheated. It is also a task to maintain the 55° storage temperature, and many times the potatoes reach the freezing point before the stove is fired up. The greatest problem has been the maintaining of these temperature and humidity conditions throughout the entire house.

A number of years ago a standard stove heated storage house in Virginia was equipped experimentally with electric heaters. The results were pleasing. Since that time other experiments have been conducted in a number of southern states.



Left: The inside of the G. C. Harris electrically heated storage house at Ranger, Georgia.

Right: The soil heating cable used for heating the Harris' potato house. It is spaced 3-inches apart on 1 x 3-inch wood strips.

Sweet potato houses are equipped with false slatted floors. When electric heat is to be installed, these floors are raised 8 inches by placing them on 2 x 8 inch stringers to permit placing the heaters under the slats. This also permits the cooler air from the floor ventilators to mix well with the warm air in the house. The false floor is generally cut into sections so it can be easily removed for cleaning the house.

The electrical equipment most commonly used consists of strip or space heaters with a capacity of 500 to 1,000 watts. These heating strips are about ¼-inch thick by 1½ inches wide and may be secured in a number of different lengths. The 1,000 watt heaters are placed directly over the floor ventilators and the 500 watt heaters are scattered uniformly over the floor of the building. An adjustable, automatic thermostat is connected in the circuit to turn the heaters off and on maintaining a constant temperature as desired. The number of heaters required will depend upon the size of the house and the type of construction. For large installations, special relay switches are used in connection with the thermostat. Pieces of sheet asbestos are placed under each heater as insulation and as a precaution against overheating the floor and the adjacent stringers. The heaters are then covered with a cage of ½-inch mesh hardware cloth to prevent any rubbish or other material from coming into direct contact with them. A piece of 28 gauge sheet metal is nailed to the bottom of the false floor directly above the heaters to distribute the heat and to serve as a baffle for preventing the overheating of potatoes directly above the unit.

Results of Electric Installations

A 2,000 bushel house was constructed in 1927, at the Junior College at Martin, Tennessee, according to plans recommended by the U.S.D.A. It was heated by a coal burning stove located near the center of the building. In 1936, six 1,000 watt strip heaters were placed over the ventilators cut in the floor and twelve 500 watt strip heaters were spaced uniformly over the remaining floor surface. This made a connected heating load of 12 kilowatts. The storage capacity was increased 400 bushels by removing the stove. The cost of the installation was $160.00. The power consumption for the season (October 14, 1937, to March 11, 1938) was 1,960 kilowatt hours. A total of 2,183 bushels were stored at the rate of less than one kilowatt hour per bushel. The average percentage of good potatoes taken from the electrically heated house was 95.8 percent as compared with 89.1 percent for potatoes cured and stored in conventional stove heated houses.

Mr. G. C. Harris of Ranger, Georgia, converted

Left: 2,000 bushel standard U. S. D. A. sweet potato storage house at Junior College, Martin, Tenn., equipped with electric heaters and automatic control.

Right: An unused building converted into an electric storage house in Montgomery County, Tenn.

a small stove heated potato house 12 x 20 feet into an electrically heated house by using 720 feet of soil heating cable, and four 200 watt strip heaters in the center aisle over the floor vents. An ordinary electric hotbed thermostat was used to maintain the temperature desired. The same soil heating cable and thermostat is used by Mr. Harris in operating his electric sweet potato hotbed. He cured and stored 575 bushels of potatoes in 1937. They were selling for 50 cents per bushel at digging time. After being properly handled and cured he sold them for $1.00 per bushel while the local market was 85 cents. The operating cost was six cents per bushel for curing and storage, leaving a margin of profit of nine cents per bushel. Mr. Harris is so well pleased with the electrical curing and storing that he plans to construct and electrify a 1,000 bushel house this year in addition to his 600 bushel plant.

During the past two years observations have been made in seven electrically heated sweet potato storage houses. Here are some of the advantages of controlled electric heat, which have been noted:

1. There is no chilling of potatoes in the bottom hampers because the heat is applied beneath the potatoes.
2. Uniform distribution of heat throughout the building limits the temperature variations to about 2° F.
3. Automatic control eliminates the danger of overheating or chilling.
4. Storage space is increased 15 to 20 percent by merely removing the stove

Main switch, thermostat control and heaters in a small storage house at the University of Tennessee Farm in Knoxville.

5. The fire hazard is practically eliminated.
6. Labor costs are reduced because the only attention necessary is to set the thermostat for the desired temperature and adjust the ventilators.
7. The increase of approximately 7 percent in marketable potatoes is nearly sufficient to offset the cost of the complete electrical equipment in one season.

SAVE THE FARM

OCTOBER 9 to 15 is Fire Prevention Week. It is just a reminder that millions of dollars worth of farm property are destroyed by fire each year, and that much of the loss might be prevented.

Rubbish, oily rags, starting fires with oil or gasoline and carelessness with oil stoves, lamps and lanterns are all fire promoters. If there is a lull in farm work just now, this should be a good time to "clean up" and to rehearse with the family what should be done in case of fire. Quick action and knowing what to do would often prevent a fire which two minutes later would be out of control.

Lightning is a bad offender in farm fires. To make a lightning rod effective, it must have a low resistance connection to the ground. A pipe in dry earth is not a good ground; and a loose clamp on a dirty pipe makes a poor circuit.

Spontaneous combustion in hay is a frequent cause of fire. Be sure the hay is sufficiently cured. Chopped hay will burn less readily than loose hay; it packs closer and contains less oxygen.

Take no chances on poor wiring, worn extension cords or broken plugs. Electricity reduces fire hazard when properly handled, but may cause fires if improperly installed or used. Do not use pennies behind fuses, or larger fuses than are intended for the circuit. Fuses are not installed as handicaps. They are intended to get hot and melt when the circuit has too much load on it and thus prevent the possibility of the wire in the wall getting hot enough to set fire. Wires get hot when they are called upon to carry more current than they were designed for.

Be sure to disconnect the electric iron before you go to gather the eggs and never leave it flat on the ironing board even while you answer the door bell.

Electricity can play an important part in fire

(*More on page* 20)

The 500 watt CX lighting unit used in brooder houses on the Floyd Tibbett farm, Lake Geneva, Wisconsin.

Wisconsin Farmers Use Ultra-Violet Lamps to Get More Eggs with Better Shells, Firmer Yolks, Increased Hatchability and Greater Net Returns. Some Actual Experiences, and Specific Recommendations.

By M. R. NORTON

SUNSHINE SERVED FROM BOTTLES

Mr. Norton is with the Wisconsin Power and Light Co., Fond-du-Lac. He was formerly in charge of the Company's rural service program.

FIFTTEN million eggs will go to market this year from farms that treat their hens to bottled sunshine or ultra-violet light. Another modern miracle has come out of the electrical laboratory and is growing up to help the battle to make farming more profitable and life in the country more worth living.

Do you remember that hot Sunday in July, 1933, when you and your family looked for some cool spot to pause and rest your feet while taking in the wonders of the Century of Progress in Chicago? And you were invited into that little room in the electrical building and given a chance to rest. Then, when the room was filled with people, the lights were switched off and while the room was in complete darkness beautiful pictures appeared on the walls as though they were painted in strange colors. It was invisible or ultra-violet light that acted on especially prepared paints and caused the pictures to appear.

Ultra-violet light acts in a more profitable way on substances in the skin of animals and the combs and legs of chickens to enable them to absorb more calcium from their food. The result is similar to that accomplished by cod-liver oil, but many tests in laboratories and in the field indicate that the proper use of ultra-violet light over poultry will usually produce better results at low cost without causing objectionable flavors, to say nothing of the doubt you sometimes have about the quality of the oil you are using.

I have seen some flocks of hens which I thought were almost perfectly balanced as to high egg production, health, and quality and hatchability of the eggs. Unless you have one of these rare flocks you may expect to receive part or all of the following benefits from the use of ultra-violet over your birds: more eggs, by as much as 20%, healthier hens, firmer egg yolks, harder egg shells, larger eggs, better tasting eggs (or broilers if you are using lights for them), and lower cod-liver oil bills.

Mr. J. J. Bennett of Friendship, Wisconsin, made the following statement after using "bottled sunshine" for three months: "In this flock we have reduced soft-shelled eggs to practically nothing, where formerly we got five to seven per 200 eggs. This item means about ten cents saved per day or $36.50 per year. We are using about that amount of electricity for this purpose. Mortality has been less by far. I may add that I am not using cod-liver oil, which formerly cost about $1.00 per week for my hens."

Herman Eppler and Sons, who operate Hillcrest Farm at Oconomowoc, Wisconsin, report: "450 hens increased 10% in eggs shortly after installing—laid better than 65% all winter and spring—hens were much brighter and healthier and the eggs were of more uniform and better quality."

Perhaps some of the people of ancient times who worshipped the sun weren't so far wrong. Summer sunshine has plenty of ultra-violet light along with the light which you can see. When your flock is exposed to it no artificial sunshine is needed. But when winter comes and the sun drops lower on the horizon, more of its beneficial rays are strained out and your hens are kept indoors as well. Ordinary window glass allows the passage of visible light, but blocks out the invisible ultra-violet light as effectively as a concrete wall.

The most practical means of providing these beneficial rays seems to be the unit which consists of a fourteen-inch aluminum reflector in which is mounted a 500 watt CX type mazda lamp. The glass in this lamp is made of quartz and will pass a maximum amount of the healthful rays given

off by the especially designed element. Aluminum must be used in the reflector because an ordinary porcelain reflector which is fine for visible light will reflect ultra-violet light no farther than you can bounce a stone off a pillow. The aluminum should be "alzaked" or plated to prevent it from turning black with age and becoming inefficient. This unit can be connected to any ordinary lamp socket or outlet and should be hung so that the bottom edge of the reflector is 36 inches above the level of the feed in the mash hopper. By hanging it in this way over the mash hopper one unit of this size will irradiate from 100 to 125 hens. If more than two units are used you are apt to need heavier wiring up to and within your hen house for the sake of good operation and safety. There is available a smaller unit using the 250 watt CX lamp, which is suitable for about 75 birds. This unit must be burned about twice as long for the same results. Sometimes a much more powerful unit is desired, especially in connection with battery brooders. The unit for this type of installation uses a mercury-filled lamp known as the S_1. This is a much more powerful unit and must be used with great care. It is commonly used about one-fourth as long as the 500 watt CX type unit, and is more expensive to buy because of its built-in transformer.

The use of ultra-violet light over poultry is very much like some forms of exercise, too much can be actually harmful and too little is of small value. Dr. C. C. Pink, a prominent veterinarian of Oconomowoc, Wisconsin, and Mr. Lee Lloyd of Milwaukee have worked out a practical formula which seems to bring the best results at the least expense. The 500 watt units are used four hours a day, beginning preferably at four or five o'clock in the morning. This lengthens the day for the hen and takes the place of some or all of the regular lights that are being used. It helps warm up the birds and keep them active early in the day. An alarm clock can be rigged up to snap on the switch (by no means the old open type of knife switch), but a good time switch is much better. Some poultrymen prefer to apply the ultra-violet lights for two hours in the morning and for two hours again in the evening. The smaller 250 watt units are used for eight hours a day and the more powerful ones using the mercury-filled lamps are usually used for only one hour during twenty-four.

Some Important Precautions

Here is the place to point out several important precautions. Absolute regularity must be maintained. It is not possible to miss one day and expect to make it up by using the sun lamps twice as long the next. This practice will almost surely throw the hens off feed.

It is necessary to start the use of the lamps very slowly. The best rule for the 500 watt type is to start with ½ hour of use each day for the first week, 45 minutes for the second week, 1 hour for the third, 2 hours for the fourth, 3 hours for the fifth, and 4 hours each day thereafter. The timing for the 250 watt unit should be double that of the larger unit, but the mercury type unit using the S_1 lamp should be allowed only one quarter of the time of the 500 watt size. When the hens come in off the range in the fall this schedule can be speeded up so that the full amount of ultra-violet is being given at the end of four and one-half or five weeks.

The J. J. Bennetts of Friendship, Wis., showing their CX lamp 30 in. above the feed hopper.

More light than recommended will do more harm than good. On the other hand less light than recommended will not prove as profitable as you have a right to expect. 200 hens won't get much benefit from a unit suitable for 125 birds. There should be one light for each hopper and it should be the correct size for the number of hens that use it.

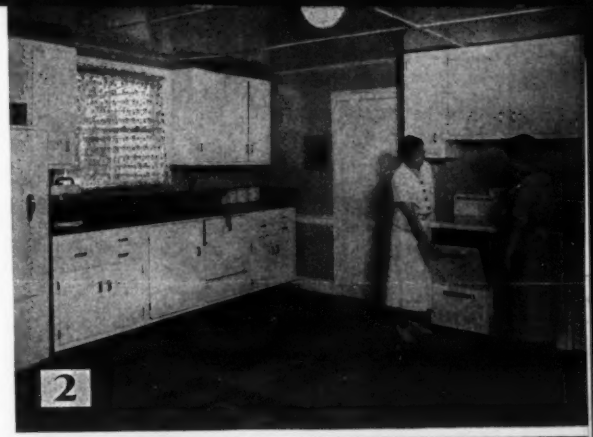
You have probably been thinking that the use of a 500 watt lamp will break the bank. Let's figure it out. 500 watts for four hours per day adds up to 2000 watts or 2 kilowatts per day for 125 hens. If your rate is 3 cents per kilowatt hour that means that it will cost you 6 cents per day. It won't take many more eggs in the basket to make a handsome return on your investment to say nothing of harder shells with less breakage and fewer broken down or dying hens.

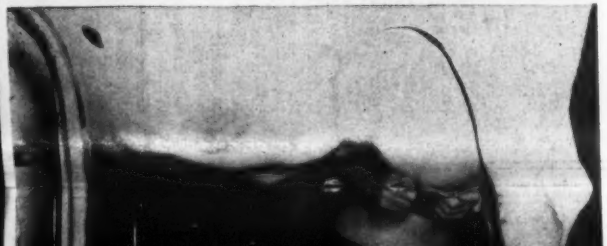
Little chicks also benefit greatly from the use of "bottled sunshine." They seem to grow faster and be better able to throw off those diseases that attack weakened birds. Lamps can be brought up to full use in two weeks with baby chicks. Floyd C. Tibbitts of Lake Geneva, Wisconsin, is one of the many farmers who found it helpful. He found that his baby chicks wern't doing well so he installed a unit in one of his brooder houses. Within a week the improvement was so noticeable that he equipped his other houses as well.

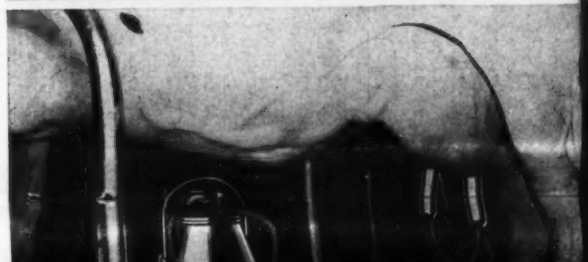
Ultra-violet light will not take the place of good food, sanitary conditions, nor proper ventilation. A study of the troubles of those who have been dissatisfied showed lack of proper care of the flock or else incorrect use of the equipment. Ultra-violet will not cure infectious diseases altho its beneficial effect on the health of the flock may aid the remedy your veterinarian recommends.

Wisconsin farmers who use their ultra-violet lights carefully are making twenty-five to fifty dollars of extra profit per unit per year after paying for the equipment. It is these dollars in the bank that are the best kind of bottled sunshine.

PROVING FARM ESTABLISHED







THESE are some BEFORE and AFTER views on the recently established Westinghouse Proving Farm near Rochester, N. Y. The owner of the farm is Nelson R. Peet, a graduate of Cornell University and a former New York County agent. Mrs. Peet is a Smith College graduate, and in addition to her farm home activities has raised a family of four boys and taken an active part in community affairs. The electrical proving part of the farm is being sponsored by the Extension Service of Cornell University, the New York State Farm Power and Light Committee, the Rochester Gas & Electric Corporation and the Westinghouse Company.

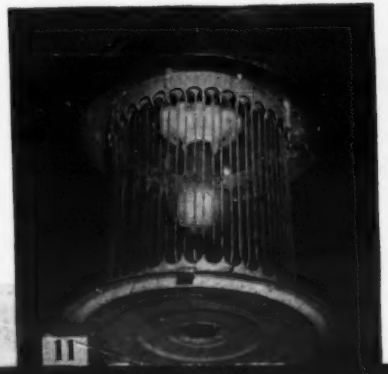
The farm embraces 200 acres on the shore of Lake Ontario. Thirty-two acres are in bearing apples and the remainder is devoted to general farming and dairying.

The objectives are to prove through economic studies the benefits and necessity of electric power on typical American farms; to demonstrate time-saving methods; and to improve the design of electrified farm machinery and appliances. The farm

benefits and necessity of electric power on typical American farms; to demonstrate time-saving methods; and to improve the design of electrified farm machinery and appliances. The farm was officially opened on August 18th.

Photographs from the Proving Farm

1. The old kitchen.
2. The same kitchen transformed. The cabinets contain sink and dishwasher in addition to many kitchen appliances.
3. The old washing arrangement.
4. New laundry equipment on the opposite side of the kitchen from the sink.
5. You name it.
6. The same cows, but a new interest in dairying.
7. The deep well was called on to supply 252 gallons of water per day for this milk cooling job.
8. Colder milk; less water; less labor.
9. A 1/4 h.p. motor now replaces one man on this job.
10. An electric motor was used last summer to mow away the hay. Less labor; more hay per mow; less waste in feeding.
11. One of the light traps which is being used experimentally for control of insects in the orchard.



HOUSEKEEPING

Conducted by GAIL MEREDITH

Stirring the soup.

Soup for Supper

IF YOU had the radio on that day, perhaps you too reached for a pencil and snatched up an envelope to take down her recipe for vegetable soup as Madame Schumann Heink gave it. I can't remember when it was: quite a long time ago, though, for the scrap of brown paper I scribbled it on has been folded and refolded many times.

This was a very special soup. She made it again and again when she was a young and struggling student, very poor, she said, and always hungry. The soup did not cost much, because those were the days when the butcher would throw in a knuckle bone and think nothing of it, and five to ten cents worth of beef in soup would stretch across several meals.

The recipe is simple.

1 veal knuckle bone
1½ cups potatoes, diced
½ cup celery cut fine
1 lb. lean beef
1 cup carrots, diced
¾ cup minced onion

Season to taste

Madame Schumann Heink covered the veal and beef with three quarts of water—or somewhere thereabouts, she said, and let it simmer an hour and a half. Then she added the vegetables and set it back to simmer another hour and a half.

Modern research leads us to change one or two steps when we are making this soup. The whole trick in making a good stock is getting the juices, what my grandmother used to call "getting the good" out of the meat. The best way to do that, food experts have found, is to cut the meat in small pieces and put it in cold water, letting it stand half an hour before you begin the cooking, heating the water slowly, and simmering for hours. The longer it cooks, the richer the stock will be, until you've extracted all the soluble material from the meat, of course.

After you get a good stock, you can vary the character of your soup in countless ways. One of them is seasoning.

I hope the corner of your cupboard you turn to when you open your cook book to SOUP has a row of little jars or packets of dried herbs. Jars, I say, if you've raised and dried the herbs yourself. Packets if you have bought them, as you can, for a few cents in any city markets.

Thyme, summer savory, bay leaves or lovage will add different, tantalizing flavor to the pot of soup. Parsely and chives growing in pots in your sunny southern windows help you, too, Some folks like spices, some catsups, curry powder or highly seasoned sauces. If you are bent on making soups that are different, as well as soups that are filling, and soups that are cheap, experiment with the seasoning to give your soup variety.

A Favorite of the Bruere Family

There is another soup that sticks to your ribs on a cold winter's night, I can tell you. Mrs. Bruere always makes it when she comes to town to visit her daughter. She learned it from her mother on the French farm near Nice where she was born.

First she puts two cups of dried, split peas, three stalks of celery and three quarts of water into the kettle of the well cooker on her range. She does this in the evening and lets the peas

You can make a big pot of soup in the well cooker of an electric range.

cook on Low all night long. In the morning she strains the soup.

Next she puts half a cup of flour and 4 tablespoons of butter in a pan and blends them over Low heat. Then she adds three cups of the strained soup, stirring constantly. When this is smooth, she puts in the seasonings, one teaspoon of sugar, two teaspoons of salt, and half a teaspoon of pepper, and the rest of the soup.

We always have that Christmas night for supper, and it is so good that we're all apt to keep right on eating it, and ignoring cold turkey and salad that are on the table too.

Mrs. Bruere's mother had a pot of soup on the back of the stove all the time. Most soups need very long slow cooking. Mrs. Bruere makes just as good soup in the well cooker of her electric range. You know what that is, of course, a five or six quart kettle sunk in an insulated well. Most well cookers have the heating element in the bottom of the well, and the kettle sits on it. The heating units are usually 660, 120 and 100 watts. I speak about the wattage particularly because I want to assure you that these cookers are not anything like the old fireless cookers we used to have. Even on Low the unit furnishes enough heat to keep the food steaming. The foods will cook without a mingling of flavor, and they will not be left limp and soggy at the last.

Of course you do not care about it when you are making soup, but I would like to remind you that you can cook a mild flavored vegetable with a strong flavored vegetable and a pudding and

his cooker is housed by itself for the benefit of folks ho want it and all the uits they can have on the top of the stove, too. It has a thermostat instead of three heats. You can set it to keep the food on the boil or just simmering away.

when you turn them out, each tastes as though it had been cooked by itself.

Beside giving her a very economical way of cooking, her well cooker is very easy to take care of, Mrs. Bruere told me after I had finished writing down her recipe for dried pea soup. After

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Fig. 3012 *"Pump Builders Since 1870"*

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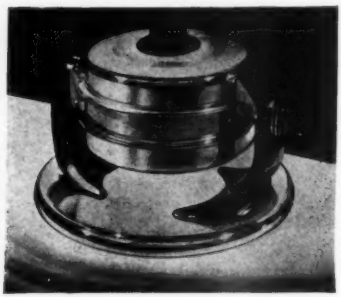
she turns the soup out of it, she washes the kettle just as she would any other pan. Only she has to keep the cover out of the dish pan. She can wash it off with a damp soapy cloth and rinse it well, but dunking it might spoil the insulation.

There are folks who can cook a ham bone in pea soup. Madame Bruere says she has added one minced onion to it, too. Trimmings, she infers, with a shrug of her shoulders.

"Oui," she smiles, "but the little peas they are the bes' by themselves, I fin'."

• • •



This waffle-maker has an automatic control which may be set for "light" or "dark," as you like them.

That Waffle Iron of YOURS

IF you are shopping for waffle irons, there are several things to think about while you are making up your mind. The manufacturer of the iron is important. His name on the name plate is your guarantee of the quality of the materials and workmanship that have gone into its making. You will have to depend on the dealer who sells it for repairs and replacements, so he is important, too. If his is a reliable, established concern, you can be sure that he will do his best to give you satisfaction.

The waffle iron should be attractive to look at because you are going to use it right on the table. It will be easier to use if it has an attached tray large enough to catch any batter that spills over. The handles should be made of some heat resisting material, and the metal parts should not tarnish.

Look at the hinge between the two grids. Is it loose enough so it can adjust itself to a rising waffle? Of course there should be a heating element in both the top and bottom grids, and there should be a heat indicator to tell you when the iron is ready for a waffle. You can suit yourself about the automatic control; it is an added convenience.

When you get your new iron home, it will need some preparation before you use it.

Plug the cord into a convenience outlet and let the iron heat to baking temperature. Then lift the cover and brush the grids thoroughly, top and bottom, with unsalted cooking fat, melted. If you have a pastry brush, that will help you get the fat on evenly. Lower the cover and let the iron heat for a couple of minutes; then detach it from the convenience outlet and let it cool with the cover still down. After that the iron is ready to use.

You do not need to grease the waffle iron when you use it. If your waffles do stick in spite of your careful preparation, it may be that the recipe does not have enough fat. Two tablespoons of melted fat to each cup of flour is the least you should use. If the temperature of the iron is either too hot or too cool, the waffle may stick. Follow the directions for your iron very carefully until you learn by experience just what temperature gives you the waffle your folks like.

If you opened the iron before the waffle was done, you let some of the steam out, and since the waffle steams itself loose, there might not be enough steam left to loosen it from the grids. As long as any steam comes out, you may be sure the waffle is not done.

When the last waffle comes off the grids, disconnect the iron and leave it open until it is cool. Brush off any loose crumbs, but neither wash nor scrape the grids. If the outside is greasy, you can wipe it off while the iron is still hot.

When you aren't using the iron for waffles, you can add a good bit to its usefulness by baking corn bread, sponge cake, gingerbread or brownies in it. I do not doubt there are more uses than this.

Doesn't it make you hungry? Nut waffles, gingerbread or sponge cake.

Perhaps you will discover some for yourself.

Did you ever try gingerbread waffles with a thin gingerbread mixture? You can pour it from a pitcher and bake it in just a few minutes. They brown quickly because of the molasses so watch them carefully.

A plain waffle mixture is the basis for both chocolate waffles and nut waffles. The recipe

MY FAVORITE FROZEN DESSERT

(Winning Letter for July Contest)

I wish you had all been here to help me taste these delicious frozen desserts this last month. There were many, many good ones. I am going to tell you about some of them later. I think you would like to try them for yourselves. The one I have selected was sent in by Mrs. T. C. Wolford, Xenia, Ohio. It is delicious. When you make it, be careful not to let the gelatin mixture get too hard before you put in the whipped cream.

* * *

Fresh Peach Mousse

2 tablespoons cold water
2 tablespoons lemon juice
2 tablespoons gelatin
2 cups crushed ripe peaches
½ cup water
¾ cups sugar
2 cups whipping cream

Heat peaches and water to boiling point, add sugar and gelatin soaked in cold water, add lemon juice, cool.

When mixture thickens, fold in cream, whipped—freeze.

Extra good.

MRS. T. C. WOLFORD,
R.R. 2, Xenia, Ohio.

below comes from the Bureau of Home Economics of the U. S. D. A. To make plain waffles, omit the chocolate and the vanilla and reduce the sugar to 1½ tablespoons, the salt to ¾ teaspoon; for pecan waffles, add to the plain waffle batter 1 cup chopped pecan meats. You can put nuts in the chocolate mixture, if you wish.

Chocolate Waffles

2 cups sifted flour
3 teaspoons baking powder
¼ cup sugar
1 teaspoon salt
1½ cups milk
2 eggs
4 tablespoons melted fat
2 sq. unsweetened chocolate, melted
¾ teaspoon vanilla

Mix the dry ingredients, add the milk and egg yolks, then the melted fat and chocolate, and lastly fold in the beaten egg whites and vanilla. Have the waffle iron hot enough to cook the waffles quickly. As soon as they are baked, sprinkle with powdered sugar and serve.

October Contest

Which cake is it you always bake for the church suppers? Which cake does your family welcome with boisterous praise? Which, of all the cakes you make, do you yourself think best?

The letter and the recipe we publish will win its writer five dollars.

If we use your recipe later, we will pay you a dollar for it. The recipes must reach me, Gail Meredith, at 1026 Seminole Highway, Madison, Wisconsin, by October 20.

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Batches of Heat

IF YOU have somebody very young or somebody very old at your house, the chances are that there are times when you want more heat

This is a warm friend of mine. Any good heating pad is.

for them, you want it all of a sudden, and you would like to be able to pour it out in that golden glow of warmth that relaxes cramped baby limbs, and cheers old bones.

You can do it with an electric heating pad or a portable electric heater that you plug into a baseboard outlet. You know how comforting a soft warm pad is when you stretch your feet down to the very chilliest depth of the foot of the bed on a cold winter night. It has plenty of users in any family—be they sick or well, once they get a taste of the relaxing comfort just a few minutes of warmth can bring when you crawl into a cold bed.

Have the windows as wide open as you like, you won't shiver getting the bed warm if you turn the heating pad on for a few minutes.

The portable heaters that warm you with a brilliant glow are easy to use and quick in action. As soon as you plug them in, they begin to get

A fan in the center of the heater blows warm air about the room. Tommy likes it.

you warm. The circulation heaters with a fan behind the heater coils blow warm air over a wider area and will heat up a small room in a very little while.

These heaters need very little care. Because they have a heating element with wires inside, you may expect that the wire will sometime break under rough handling or just from many hours of use. You can get new elements for a good heater. But go to the dealer you bought it from, and be sure that the element is of the same make and that its wattage and voltage are identical with the one you are replacing.

If you have one of these portable heaters, you are probably going to use in in the bathroom these chilly mornings. If you do, remember that when your hands are wet, you'd better keep them away from any electric appliance plugged into the convenience outlet.

Water is a good conductor of electricity and if there were any defects in the insulation of the cord or the appliance, you might get a shock. If the insulation of the appliance and cord are in good shape, this won't happen, but just for safety's sake it is a good plan to teach all your folks to dry their hands before they touch the heater.

If you want to be sure they can't forget not to touch anything electrical when they are in or touching the water, set the heater far enough from the bath tub and the lavatory, so that a person cannot touch the faucet or the water and the heater —not at the same time.

Farm Lighting Goes to Town

(*Here from page* 8)

switch for that room to be. Check the correctness of your placing by walking into the room in the dark and searching for the imaginary switch. Must you walk across the room to reach it? Perhaps you should have a double set of switches for that room, one at each door. Surely switches are needed at both the top and bottom of a flight of stairs. You may think this marking of switch locations is unimportant but it will save time when you have your wiring done. The electrician will know where to place the switches and you will have convenient control of your lights.

As the daughter of a farmer and a teacher of home economics in a rural high school, I am thrilled over the fact that we can not only study and talk about good lighting, but that now we may actually have it—and at a reasonable cost.

Save the Farm

(*Here from page* 11)

protection. The elimination of lamps and lanterns helps. The electric range obviates the starting of kitchen fires. The electric water system is a stand-by for quick action. Do not expect a small stream to put out a big fire; but all big fires are small fires at the start. Have the water handy. Fire in the barn or dairy for producing hot water and steam for sterilization of utensils is always hazardous. It may be done more effectively and satisfactorily with electricity.

Those who have had them know that one farm fire is one too many. G. W. K.

The Difference

My babies wiggled in the night
And cried out loud, as if from fright,
  We got up many times to see
  That all was as it ought to be;
We found the covers kicked about
And those poor rascals cold as trout.

My grandchild sleeps the whole night through
As if there's nothing else to do;
  She never wiggles, never cries,
  Just settles down and shuts her eyes.
She's just too cozy to be bad,
She has a warm ELECTRIC PAD.

MRS. AGNES JUST REID, Firth, Idaho.

Cisterns for Water Supply

EDITOR'S NOTE. *Mr. Robert Montgomery, Vice President in Charge of Sales of the Louisville Gas and Electric Company of Louisville, Ky., is a crusader for good farm water supplies. It is in part because of Mr. Montgomery's enthusiasm and his experiences on his own farm that we are running the series of articles on water supply in* ELECTRICITY ON THE FARM. *The following paragraphs are quoted from a letter received from Mr. Montgomery. They should be helpful to those who must depend upon cisterns and reservoirs for their farm water supply.*—G. W. K.

"As I stated in previous letters, the purchase and installation of a pump is a very simple matter, but obtaining a source of water supply is usually one of the most perplexing problems of a farmer.

"In a state blessed with such generous rainfall as Kentucky, there is no reason why anyone cannot have an abundance of good water if he has sufficient roof space to supply a cistern, but, unfortunately, the average farmer's idea of a cistern is one that will hold about 20,000 to 30,000 gallons of water because water from the cisterns with which he is familiar has been drawn with a hand pump and not used freely in large quantities as is the case when an automatic, motor-driven pump is installed.

"Cisterns do not have to be constructed by digging round holes in the ground. They may be square or any other shape, and they may be constructed of concrete and located on the side of a hill where they are easily drained by opening a valve, which facilities washing them out occasionally.

"Personally, I would not drink water out of a cistern that could not be thoroughly cleaned occasionally and provided with a filter to keep leaves and other foreign matter from entering.

"Some years ago, when I bought the farm where I now live, it had a cistern at the barn and at each of the three tenant houses, which had been used for drinking purposes as well as watering stock. One of the first things I did was clean out these cisterns and I found about a foot of decayed matter in the bottom of each of them, probably consisting of everything from pigeon manure to dead mice. I installed concrete covers over the cisterns and provided them with concrete filters in which were placed gravel, sand, etc."

Experience is good, if not bought too dear.
Thomas Fuller.

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ON THE AIR

Conducted by JEROME J. HENRY

Work Harder in Television

THAT television will be far more exacting upon producers and actors than the radio and movies was pointed out by Maxine Davis in the Cosmopolitan magazine for June. She quotes the NBC television coordinator, C. W. Farrier as follows:

"Compare television and the movies. A movie studio thinks it does a good day's work if it turns out five minutes of usable film sequence per day, whereas the television station will have to turn out many hours of program service per day. This means top notch, quick thinking personnel."

A person who hopes to go into television, Farrier says, should get a good background in electronics if he is interested in the technical end. If the producing side attracts him, he should attend one of the good schools that teach that.

• • •

Grasshoppers Once His Fare

DID you ever dine on baked grasshoppers? Or whole roasted monkey? Professor Quiz has.

The man who knows all the answers to the endless questions put to the courageous contenders on his program has tasted strange delicacies found during his travels around the world and still likes to reminisce about them while his wife insists on serving him a nice healthful American salad.

"Only once was I confronted with a dish that proved awesome," the Professor relates. "That wasn't in any remote country such as Africa or India which I visited, but in conservative England.

"I was attending one of the annual dinners given by the Explorer's club in London. As you may know this organization delights in serving one course designed to stimulate, if not shock, the jaded appetites of guests. For the first time in my life I almost lost my zest for food. There in the center of the table was a whole roast monkey, complete with life-like eyes! Of course I had eaten monkey

Tommy Riggs and Rudy Vallee.

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As a reader of ELECTRICITY ON THE FARM you are entitled to our buyers' information service free of cost. Here is how it works.

Whenever you are seeking information about any piece of equipment or material that you are planning to buy, first look through the advertisements in this issue. They are your best guide.

Then, if you do not find what you want, just use the blank below to tell us what you need and we will see that you get the information you want. That's all there is to it. Easy, simple, and it costs absolutely nothing.

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10-38

steak before, but never had the animal appeared in such a realistic state.

"All my other memories of eating in London are satisfying. I remember the mingling of dandies in top hats and tramps in torn clothing at the sidewalk stalls that used to spring up at nightfall in London before the war. Cabbies and limousine riders stopped to join pedestrians in buying steaming hot potatoes. Most of them bought two extras, one for each pocket, to keep their hands warm.

"Baked grasshoppers in Africa, tasty and crunchy, were probably the rarest food I ever ate. The most romantic meal was in France, I used to go into a little place up the Seine river about ten miles from Paris. I can still remember the delicious catfish that was the "specialitie de la maison" and the walk through the garden after the main courses, to pick strawberries or whatever other fruit growing there struck my fancy—for dessert."

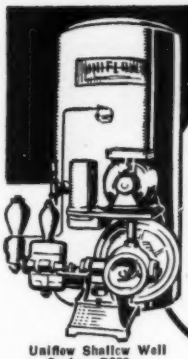
Editor's Chat

(*Here from page* 4)

whether it is some pajama clad grandma or a bald headed guy who is keeping you awake arguing with the conductor. There's room up there, too. Males under five feet eleven and most females who are hinged somewhere near the middle can sit straight up without bumping anything, after the sheet is turned down. It gives you sort of a feeling of independence too, knowing that you are not sleeping under someone else's bed. Then you have optional ceiling clearances like in a story-and-a-half house. Next to the wall it's snuggly, while toward the aisle over your left leg there's a big open space. If you feel experimentalish, you can kick that left leg right up against the car-top. You can't do that in a lower. If you are traveling "tourist," the air is better and cooler in an upper. You're not so much penned in. Tourist or standard, those robust-middled folks who amble up and down the aisle can't bump their bussles and hip-pockets on your front door and keep you thinking company's coming. Of course there are no plumbing facilities in an upper. The sign says "ring the bell and ask the porter for a ladder," but those fellows are sound sleepers. When you get desperate, watch out about swinging from the curtain rod. It's just made for curtains. There's an arm on the seat below, but my foot slipped, and the lady's false teeth were broken. Well I'm home now, but I'm not forgetting the uplift to an upper.

Hope is a good breakfast, but an ill supper.
Francis Bacon.

Ten thousand great ideas filled his mind;
But with the clouds they fled, and left no trace behind.
Thomas—Castle of Indolence.



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Many farmers report costs below ten cents per ton. The Viking Junior Hammer Mill is fully automatic. Grinds while you are doing other chores. Can be plugged into any convenient 110 or 220 volt service outlet and the half horse power motor will grind up to 700 pounds per hour. With a Viking Mill you can grind your own feed when and as you want it . . . and always have it fresh.

Agricultural experts emphasize the greater nutrition value and increased yield of FRESHLY GROUND grain. Feed ground fresh with a Viking Mill will make profits for you and lessen danger of spoilage. One farmer says:

"Received Viking Junior Hammer Mill O.K. I like the mill fine. I grind feed for 6 cows and crack corn for 125 chicks. The feed is fresh and cows give more milk on the same amount of feed. The gain was about two gallons for 6 cows. . . ."
Signed . . . Lloyd Jacobs, Streator, Illinois.

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DAZEY ELECTRIC CHURNS

Questions and Answers

Soil Heating Cable for Brooders

Question: *What Experiment Stations have been carrying on investigations using soil heating cable in electric brooders?* B. F. H.

Answer: Oregon State College, Corvallis, Oregon, University of Nebraska, Lincoln, Neb., University of Tennessee, Knoxville, Tenn.

Nutrient Solution Culture

Question: *Where can I get information about the water culture method of growing plants.* H. J. W.

Answer: We have no printed material on the water culture method of growing plants but have arranged with Professor W. S. Krueger of New Jersey to write an article on that subject. In the meantime, you can probably get information from the Agricultural Experiment Station, University of California, Davis, Calif.

Refrigeration for Milk Tank

Question: *Could I fix a pipe to my milk vat and get the apparatus to cool milk below 60° with electricity?* G. G.

Answer: It is not practical to cool milk electrically in a tank which has not been properly insulated. Four inches of sheet cork is usually used for insulating. Instructions for building such a homemade tank may be secured from Cornell University, Ithaca, New York. Most of the manufacturers of refrigeration equipment make compressor units with coils which may be installed in a homemade cooling tank. During the past year the Frigidaire Corporation has placed on the market a special refrigeration unit intended to be used in homemade tanks. A picture of it was shown on page 32 of our June issue.

Cooker for Dog Food

Question: *I operate a large poultry farm and keep dogs for protection. My dog feed cost is a considerable item. We have a number of dead fowl each year which could be used as dog food, if cooked. Can you recommend a small electrical device at a nominal price made on the order of a fireless cooker, heavily insulated which would consume a small amount of current and be suitable for this purpose. It should be large enough to take three or four birds.* E. C. K.

Answer: So far as I know there is no cooking device that fits all of your requirements, including low cost. Electric roasters would be of the right size and are insulated, but they cost from $20.00 up. My recommendation would be to use a pressure cooker over a single unit, two or three heat electric hot plate. Pressure cooking is quick, will adequately sterilize the fowl, and takes very little heat once you have steam pressure. Cooking should be started on high heat and then turned to low. Some aluminum pressure cookers are quite low in price. If you want something cheaper, use a straight

sided metal or porcelain kettle with a close fitting lid and weight the lid with a couple of bricks. Insulation would do you little good and would be difficult to keep sanitary.

You would have to be the judge of whether the food value of the hens would be worth the labor and cooking expense.

Well or Stream for Irrigating?

Question: *I have a deep well with a pump which is adequate to supply household needs only. I could either drill another well, or there is a brook about 700 feet away from the house. Am interested in knowing which is the most economical way of irrigating about five acres of fruit and truck.* H. J. W., Ga.

Answer: If your present deep well is only adequate for supplying your household needs I would not recommend drilling another well for irrigating five acres of land. You would need a much larger quantity for irrigating even one acre of ground than you would for household use. A centrifugal pump at your stream would probably be the best solution. If your ground has a slight slope and is reasonably even and not too sandy, the furrow method of irrigation is probably the cheapest for fruit and truck crops. If the soil is sandy or the surface irregular, it is usually cheaper to irrigate by sprinkling. The Department of Agriculture can send you bulletins on the furrow method of irrigation and we recommend Professor Duffy's article on page 9 of our July issue as a guide for the sprinkling method.

Soil Heating Cable for Keeping Pipes From Freezing

Question: *On page 8 of your January 1938 issue, you picture soil heating cable used around pipe to prevent freezing. I have a 60' x 30' barn converted over to poultry, but have never been able to keep the water running during the cold weather. Where can I find out more about soil heating cable? Does it heat enough to cause fire if in contact with wood? How many turns are needed per foot of 1-inch pipe? What is the current consumption? What does it cost? Who near here would carry it?* C. J. F.

Answer: Soil heating cable in lengths of 60 feet or more is perfectly safe to use in contact with wood. It will not start a fire when connected to a 120 volt circuit. I would advise against cutting the cable shorter than 60 foot lengths as the shorter lengths get hotter and might become hot enough enough to cause trouble.

Sixty feet of soil heating cable will use 400 watts or about 1 kilowatt hour in two and a half hours of time. Longer lengths use less electricity and produce less heat.

If the pipe is closed in and there is no wind blowing against it, I should say that 60 feet of soil heating cable would be ample for 35 to 50 feet of pipe.

Your local power company rural service man can tell you where to buy soil heating cable. It costs about 7c per foot.

Electrocution of Flies, Mice and Rats

Question: *In the article on page 14 of the August issue on Electrocution for Dairy Farm Flies, how are the flies lured to the light bulb in daytime? I should greatly appreciate any information you can give me about the efficacy of a trap for electrocuting rats and mice.* H. H. M.

Answer: The chute through which the cows pass is realtively dark on the inside. Light shining through the electrocutor screen attracts the flies. It may not be necessary to keep the lamp burning in the daytime. The lamp will burn little electricity, however, and its rays may add to the attraction.

We know of no electric traps for rats and mice. Homemade devices have been tried but they offer considerable fire hazard as well as possibility of dangerous shock to humans. Rats are not easily killed.

Death—Again That Homemade Fence

The following is quoted from a letter from "Bob" Blauser of Ohio State University:

"On July 6th a nine-year old girl was killed by coming in contact with an electric fence. This fence, however, consisted of taking out the porch light and putting in a two-way socket, the porch light being replaced in one of the sockets and the wire leading to the fence being placed in the other socket. Of course the only protection that was on this was a 15-ampere fuse in the regular house circuit.

"I still have to find my first case where a properly designed and well built unit has caused any injury."

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The most powerful clipper of its kind ever made.

Reviewed by T. E. HIENTON

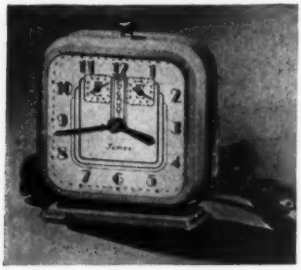
Names and addresses of manufacturers of the articles described in this column will gladly be furnished upon request to What's New Department, ELECTRICITY ON THE FARM, *24 West 40th Street, New York, N. Y.*

Electric Fly Sprayer for Dairies

A new electric spray outfit for light liquids such as fly sprays, has just been announced by one of the large oil companies. The outfit consists of a spray gun with an aluminum container of 1 quart size attached. This is connected by a small air hose to a motor driven compressor which is carried over the shoulder on a sling strap. There are two nozzles with the gun. One is for a fine spray for flying insects like mosquitos and flies. The other is a coarser spray for such insects as coakroaches or for the spraying of shrubbery. The price of the sprayer is $15.00, transportation charges prepaid.

New Electric Timer Clock

A new appliance timing clock is shown in the illustration. It consists of a 30 hour, spring-wound clock with electrical connection which may be plugged into any outlet, the appliance plugging into the timer clock. It may be used on radios, coffee makers, fans, poultry-house lights or any appliance using 15 amperes or less at 125 volts (that is 1650 watts). It may be set to turn the appliance on and then off, or off only, and may be moved from one job to another. Size 5½ x 5½ x 2¼ inches. Range of on and off operation is from 15 minutes to 21½ hours. Price $5.95.



Electric Milk Pasteurizer to Be Announced

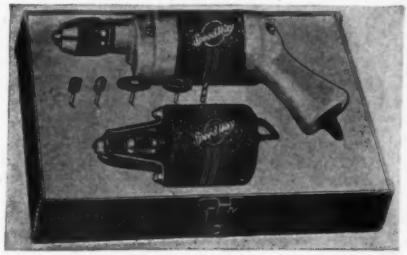
A perfected electric pastuerizer for dairies producing 1000 quarts of milk or more per day will be announced by the Trumbull Electric Manufacturing Co., at its exhibit at the Annual Dairy Show in Cleveland in October. About 40 or 50 ELECTROPURE pasteurizers are now in satisfactory use in different sections of the country. The new equipment has improved automatic controls which insure uniformity of product. The process is continuous, the controls holding the milk accurately at a predetermined temperature of about 160° for 15 seconds. The equipment is too expensive at present for small dairies.

New Book—How to Run a Lathe

A new edition of an old book which is standard instruction in school machine shops in nearly every country. It contains 128 pages and 350 illustrations covering all phases of metal lathe work, reference tables, formulae, rules, gauges, specifications and shop hints. 25c from the publisher, South Bend Lathe Works, South Bend, Indiana.

Drill and Grinder Set

For any one having use for a small drill and very small grinder, two new tools will be of interest. The drill, which may be compared with a small pocket revolver in size, operates at 1000 rpm, uses up to ¼ inch drills in steel. It sells for $7.95. The grinder is about the size of an apple, is geared up to 20,000 rpm and uses grinding wheels and burrs similar to those in a dentist's office. Price $5.95; or the two tools in a steel case for $14.95.



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